Objective of present work:

The literature survey reveals that sitagliptin, vildagliptin and saxagliptin are a novel drug for diabetes type 2 and only few methods has been reported for estimation of Sitagliptin phosphate, vildagliptin and saxagliptin in pharmaceutical formulation by Spectrophotometric and RP-HPLC. New laboratory analytical methods are continuously needed to provide accurate and precise measurements of the presence and levels of new and understudied contaminants in various environmental media like water. The scientific demands for environmental data are driving measurement requirements to a wider range of concentrations – to higher levels (parts per million) for studies of sources and the adjacent ecosystems, and to lower levels (parts per trillion) for studies of the environmental occurrence of highly toxic chemicals used in small amounts. The following are the main objectives of analytical method development for sitagliptin a recently launched new drug.

1. The diabetes mellitus which is a second leading cause for death the use of this effective drug sitagliptin is going to increase day by day.
2. To identify the highest priority science questions that need to be answered related to emerging water-quality issues and the associated contaminants.
3. To provide high quality data at environmental relevant concentrations. To conduct field based research.
4. To transfer data to the scientific community.
5. There are few methods developed for sitagliptin but the goal is to enable comprehensive and cost efficient field studies by developing a simple, precise method for identification.
6. To put up the criteria to ensure that contaminants that may have significance to environmental or human health are not overlooked.
7. To help the Forensic investigations which are conducted for priority source pathways to the environment that evaluate the occurrence of unidentified compounds for which chromatographic evidence of their presence is found (tentatively identified compounds).
8. To facilitate the development of effective regional quality assurance mechanisms.
9. To provide an integrating platform for dialogue and action to develop strong regional harmonization initiatives on quality assurance, benchmarks and credit accumulation and transfer systems.
10. To facilitate and promote mobility of students, graduates, and academic staff across the region.

11. To bridge the gap between disparate educational systems by coordinating initiatives of national accreditation bodies and regional bodies to maximise their successes and address their challenges.

12. In the view of the need in the industry for routine analysis of Sitagliptin, vildagliptin and saxagliptin, attempts are being made to develop simple and accurate instrumental methods for quantitative estimation of these drugs alone or in combination.

In the proposed work attempts shall be made.
To establish sensitive and accurate method/s for the quantitative estimation of DPP-4 inhibitors in bulk and dosage form.
To develop a method as part of field-based research projects to ensure that the method is capable of satisfying the data quality objectives (DQO’s) associated with answering high priority questions in practical study designs on an analyte-by-analyte basis.
A high priority is placed on field and laboratory quality control (QC) data in each study to ensure that the data meet all DQOs, meet acceptable quality standards, and fully document any limitations of the data, while providing useful environmental information.
To validate the newly developed methods in accordance with the analytical parameters mentioned in the USP/FDA guidelines.
To apply the newly developed, validated analytical methods for quantitative estimation of DPP-4 inhibitors in bulk and pharmaceutical dosage forms.